

EVQLQQSGPELKKPGTSVRISCKTS|GYTFTEYTIH|WVKQSHGKS  
1 10 20 30 40  
CDR1

LEWIG|NINPNNGGTTYNQKFED|KATLTVDKSSSTAYMELRSLTS  
50 60 70 80  
CDR2

EDSAVYYCAA | GWNFDY | WGQGTTLTVSS  
90 100 110  
CDR3

FIG. 1A

Amino Acid Sequence of Murine J591 Light Chain (CDRs are marked numbering as Kabat)

DIVMTQSHKFMSTSVGDRVSIIC | KASQDVGTAVD | WYQQKPGQSP  
1                   10                   20                   30                   40  
                                  CDR1

KLLIY|WASTRHT|GVPDRFTGSGSGTDFTLTITNVQSEDLADYFC  
50 60 70 80  
CDR2

|QQYNSYPLT|FGAGTMLDLK  
90 100  
CDR3

FIG. 1B

Amino Acid Sequence of DeImmunised J591 Heavy Chain (CDRs are marked, numbering as Kabat)

EVQLVQSGPEVKKPGATVKISCKTS | GYTFTEYTIH | WVKQAPGKG  
1                    10                    20                    30                    40  
CDR1

LEWIG | NINPNNGGTTYNQKFED | KATLTVDKSTDTAYMELSSLRS  
50                    60                    70                    80  
CDR2

EDTAVYYCAA | GWNFDY | WGQGTLLTVSS  
90                    100                    110  
CDR3

FIG. 2A

Amino Acid Sequence of DeImmunised J591 Light Chain (CDRs are marked, numbering as Kabat)

DIQMTQSPSSLSTSVGDRVTLTC | KASQDVGTAVD | WYQQKPGPSP  
1                    10                    20                    30                    40  
CDR1

KLLIY | WASTRHT | GIPSRFSGSGSGTDFTLTISLQPEDFADYYC  
50                    60                    70                    80  
CDR2

| QQYNSYPLT | FGPGTKVDIK  
90                    100  
CDR3

FIG. 2B

Applicant(s): Neil Bander

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

## Location of T cell epitopes in J591 VH

	10	20		
1	E V Q L Q Q S G P E L V K P G T S V R I S C K T S		J591 MoVH	
1	E V Q L V Q S G P E V K K P G A T V K I S C K T S		J591 DIVH	
	30	40	50	
26	G Y T F T E Y T I H W V K Q S H G K S L E W I G N		J591 MoVH	
26	G Y T F T E Y T I H W V K Q A P G K G L E W I G N		J591 DIVH	
	60	70		
51	I N P N N G G T T Y N Q K F E D K A T L T V D K S		J591 MoVH	
51	I N P N N G G T T Y N Q K F E D K A T L T V D K S		J591 DIVH	
	80	90	100	
76	S S T A Y M E L R S L T S E D S A V Y Y C A A G W		J591 MoVH	
76	T D T A Y M E L S S L R S E D T A V Y Y C A A G W		J591 DIVH	
	110			
101	N F D Y W G Q G T T L T V S S		J591 MoVH	
101	N F D Y W G Q G T L L T V S S		J591 DIVH	

FIG. 3A

# Location of T cell epitopes in J591 VK

10										20																			
1	D	I	V	M	T	Q	S	H	K	F	M	S	T	S	V	G	D	R	V	S	I	I	C	K	A	J591 MoVK			
1	D	I	Q	M	T	Q	S	P	S	S	L	S	T	S	V	G	D	R	V	T	L	T	C	K	A	J591 DIVK			
30										40										50									
26	S	Q	D	V	G	T	A	V	D	W	Y	Q	Q	K	P	G	Q	S	P	K	L	L	I	Y	W	J591 MoVK			
26	S	Q	D	V	G	T	A	V	D	W	Y	Q	Q	K	P	G	P	S	P	K	L	L	I	Y	W	J591 DIVK			
60										70										80									
51	A	S	T	R	H	T	G	V	P	D	R	F	T	G	S	G	S	G	T	D	F	T	L	T	I	J591 MoVK			
51	A	S	T	R	H	T	G	I	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	J591 DIVK			
90										100										110									
76	T	N	V	Q	S	E	D	L	A	D	Y	F	C	Q	Q	Y	N	S	Y	P	L	T	F	G	A	J591 MoVK			
76	S	S	L	Q	P	E	D	F	A	D	Y	Y	C	Q	Q	Y	N	S	Y	P	L	T	F	G	P	J591 DIVK			
120										130										140									
101	G	T	M	L	D	L	K																			J591 MoVK			
101	G	T	K	V	D	I	K																			J591 DIVK			

FIG. 3B

FIG. 3B

Applicant(s): Neil Bander

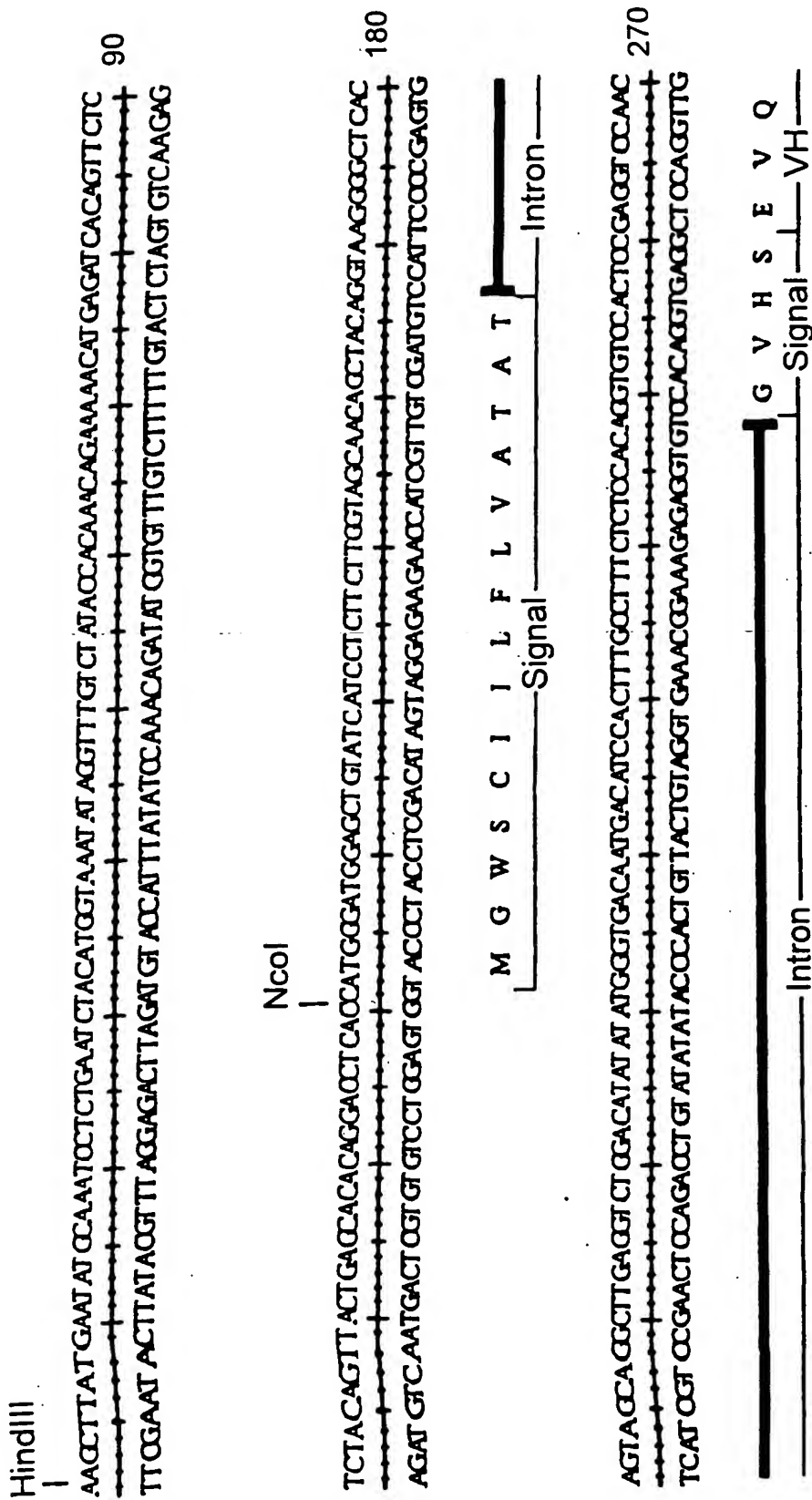
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 4A-1

Applicant(s): Neil Bander

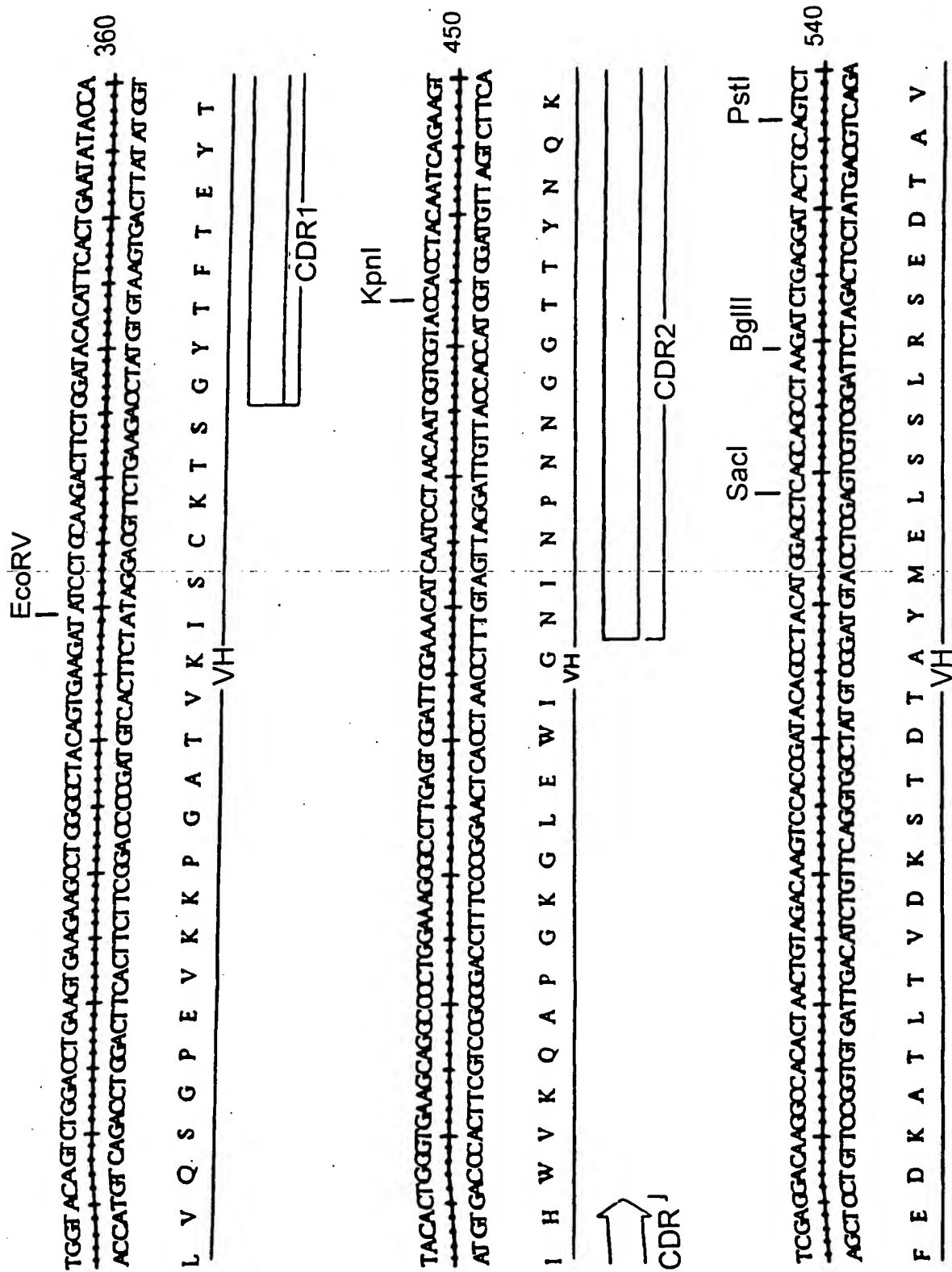
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 4A-2

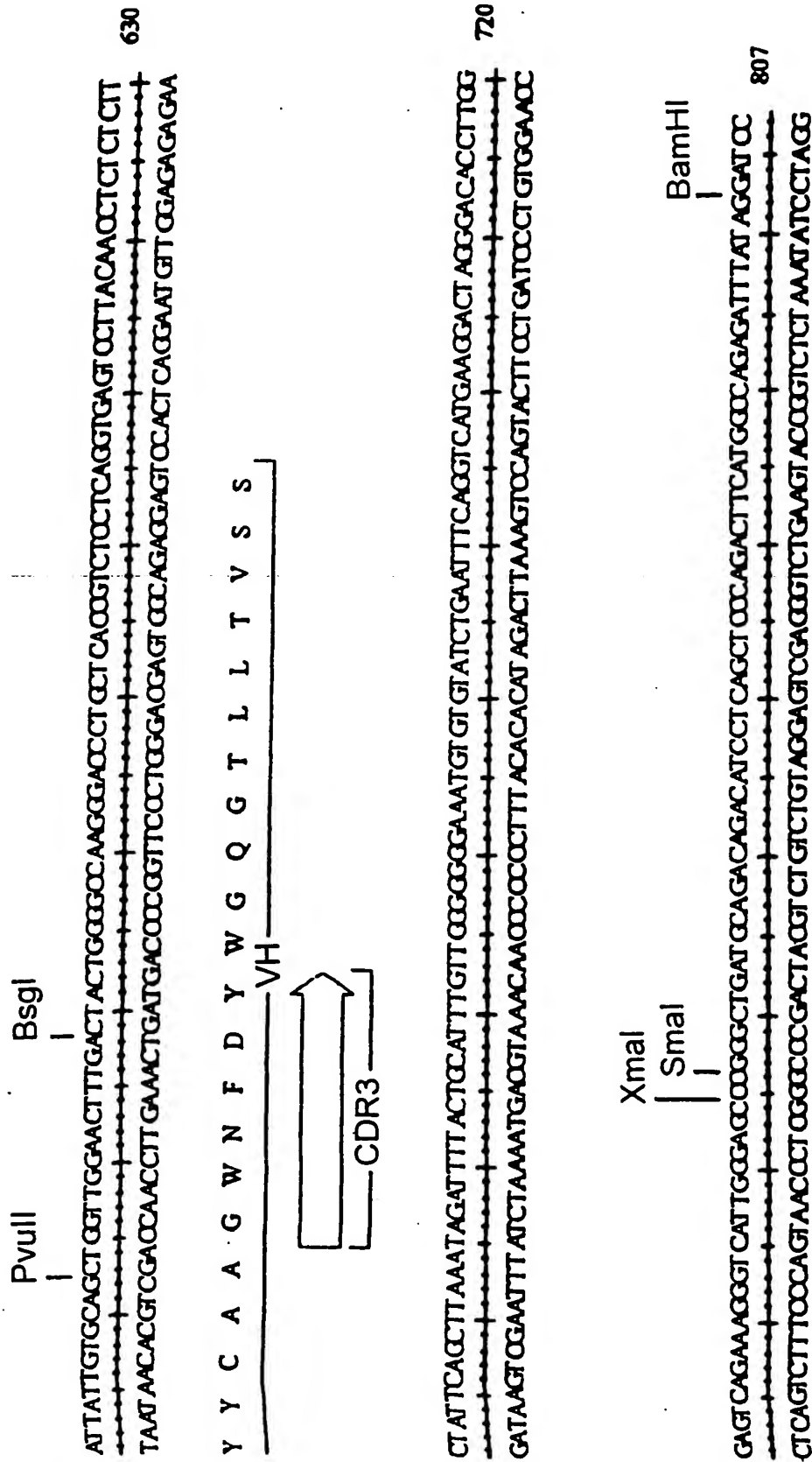


FIG. 4A-3

Applicant(s): Neil Bander

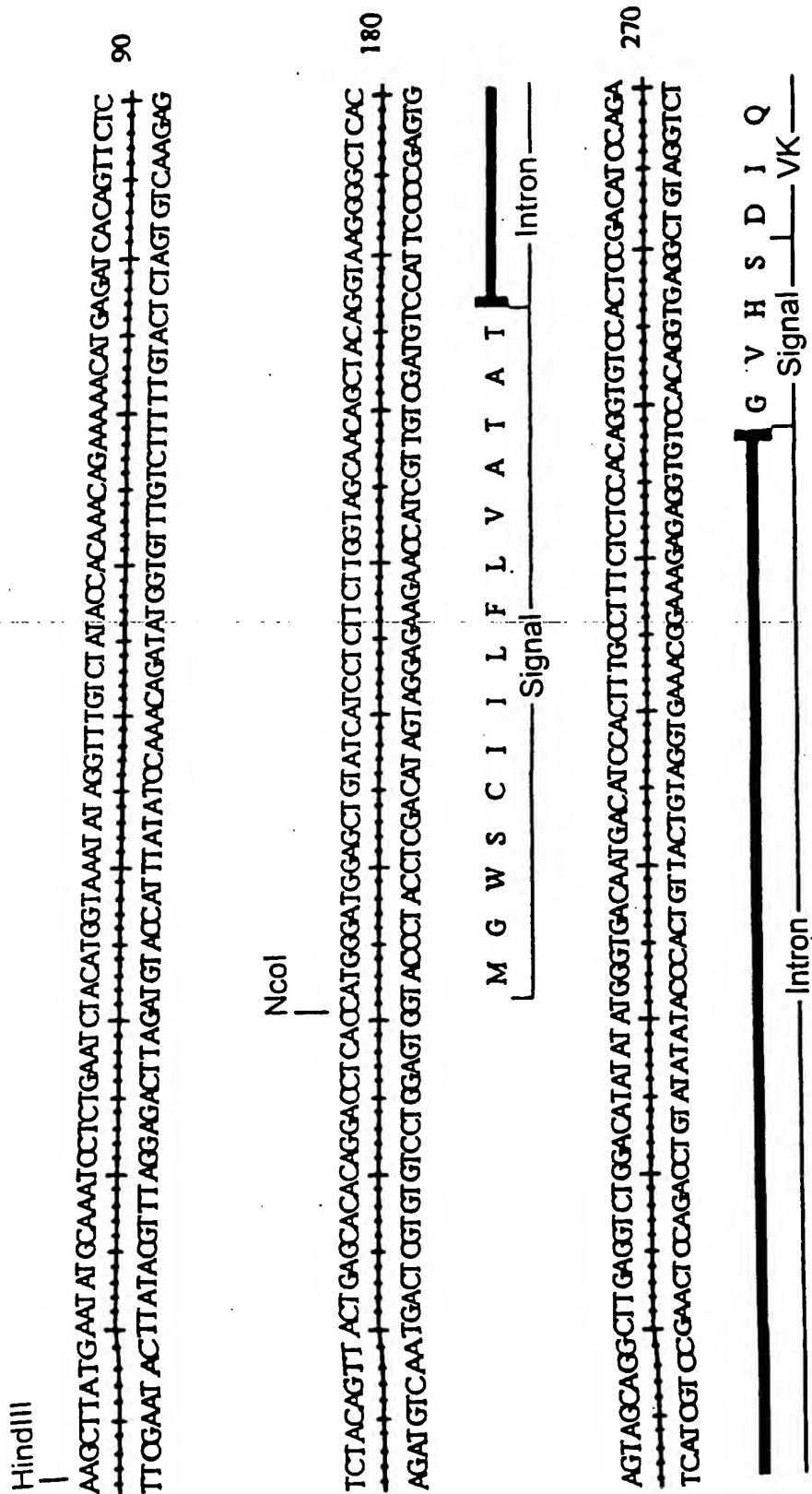
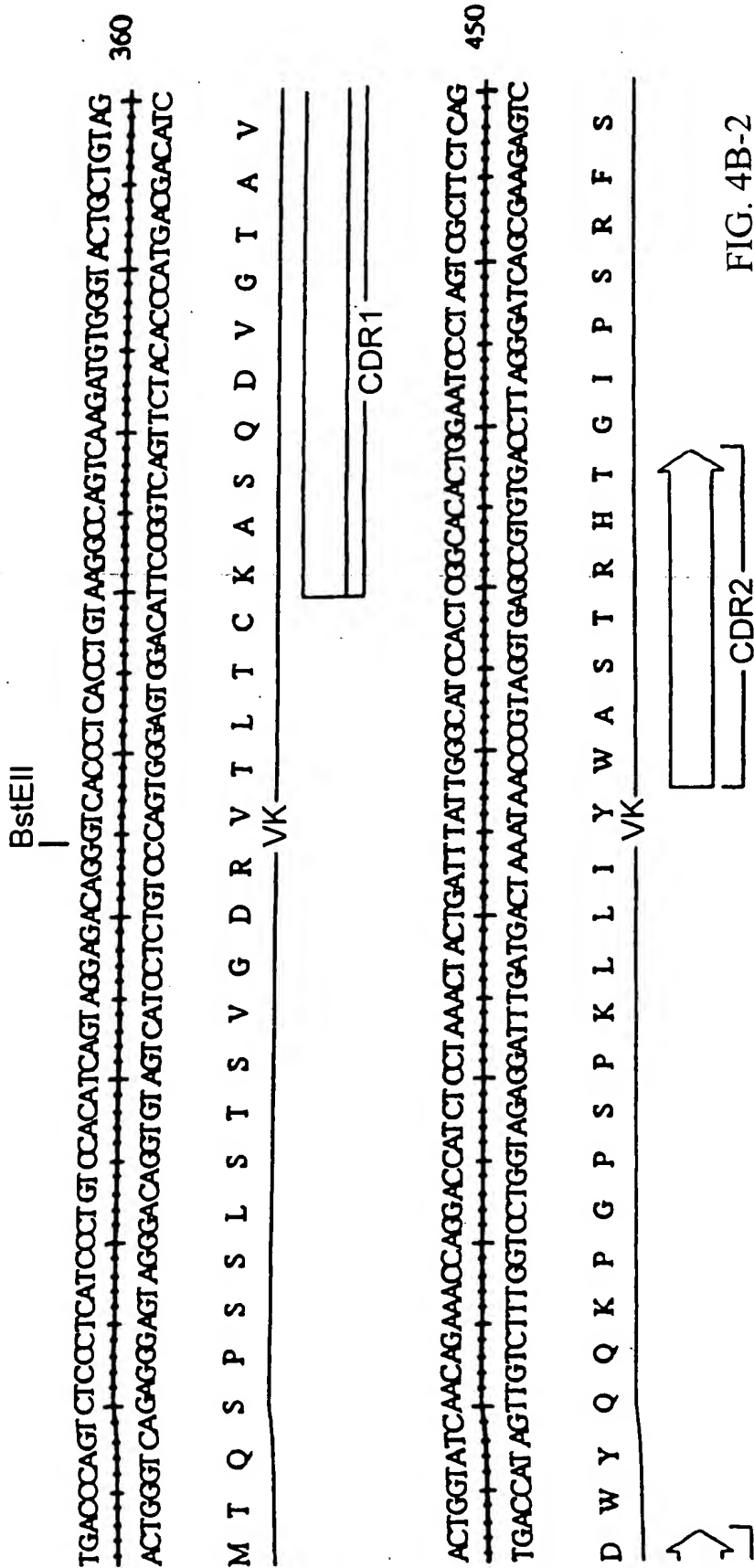
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

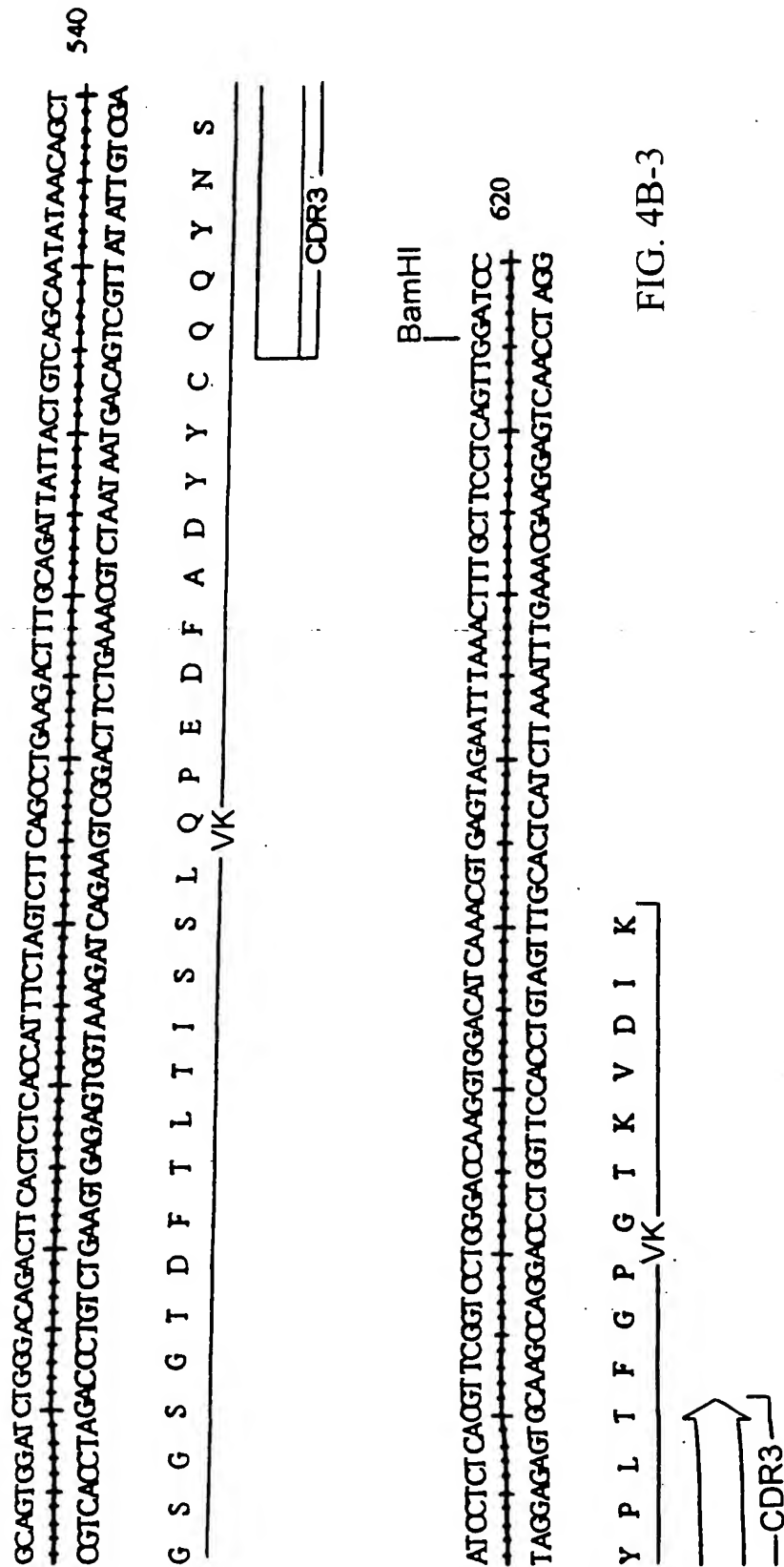
FIG. 4B-I



Applicant(s): Neil Bander

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

Applicant(s): Neil Bander

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

Applicant(s): Neil Bander

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

E V K L E E S G G G L V Q P G G S M K I S C V A S G F T F										Majority
10										
20										
1	E	V	K	L	E	E	S	G	G	J415VH
1	E	V	K	L	E	E	S	G	G	J415DIVH1
1	E	V	K	L	E	E	S	G	G	J415DIVH2
1	E	V	K	L	E	E	S	G	G	J415DIVH3
1	E	V	K	L	E	E	S	G	G	J415DIVH4
30										
40										
50										
	S	N	Y	W	M	N	W	V	R	Majority
	Q	T	P	E	K	G	L	E	W	
	V	A	E	I	R	S	Q	S	N	
	N	F								
60										
70										
80										
30	S	N	Y	W	M	N	W	V	R	J415VH
30	S	N	Y	W	M	N	W	V	R	J415DIVH1
30	S	N	Y	W	M	N	W	V	R	J415DIVH2
30	S	N	Y	W	M	N	W	V	R	J415DIVH3
30	S	N	Y	W	M	N	W	V	R	J415DIVH4
90										
100										
110										
	A	T	H	Y	A	E	S	V	K	Majority
	G	R	V	I	I	S	R	D	D	
	S	K	S	S	V	Y	L	Q	M	
	N	S								
120										
130										
140										
59	A	T	H	Y	A	E	S	V	K	J415VH
59	A	T	H	Y	A	E	S	V	K	J415DIVH1
59	A	T	H	Y	A	E	S	V	K	J415DIVH2
59	A	T	H	Y	A	E	S	V	K	J415DIVH3
59	A	T	H	Y	A	E	S	V	K	J415DIVH4
150										
160										
170										
	L	R	A	E	D	T	A	V	Y	Majority
	C	T	R	R	W	N	F	W	G	
	Q	G	T	T	V	T	V	T	V	
	S	S								
180										
190										
200										
88	L	R	A	E	D	T	A	V	Y	J415VH
88	L	R	A	E	D	T	A	V	Y	J415DIVH1
88	L	R	A	E	D	T	A	V	Y	J415DIVH2
88	L	R	A	E	D	T	A	V	Y	J415DIVH3
88	L	R	A	E	D	T	A	V	Y	J415DIVH4

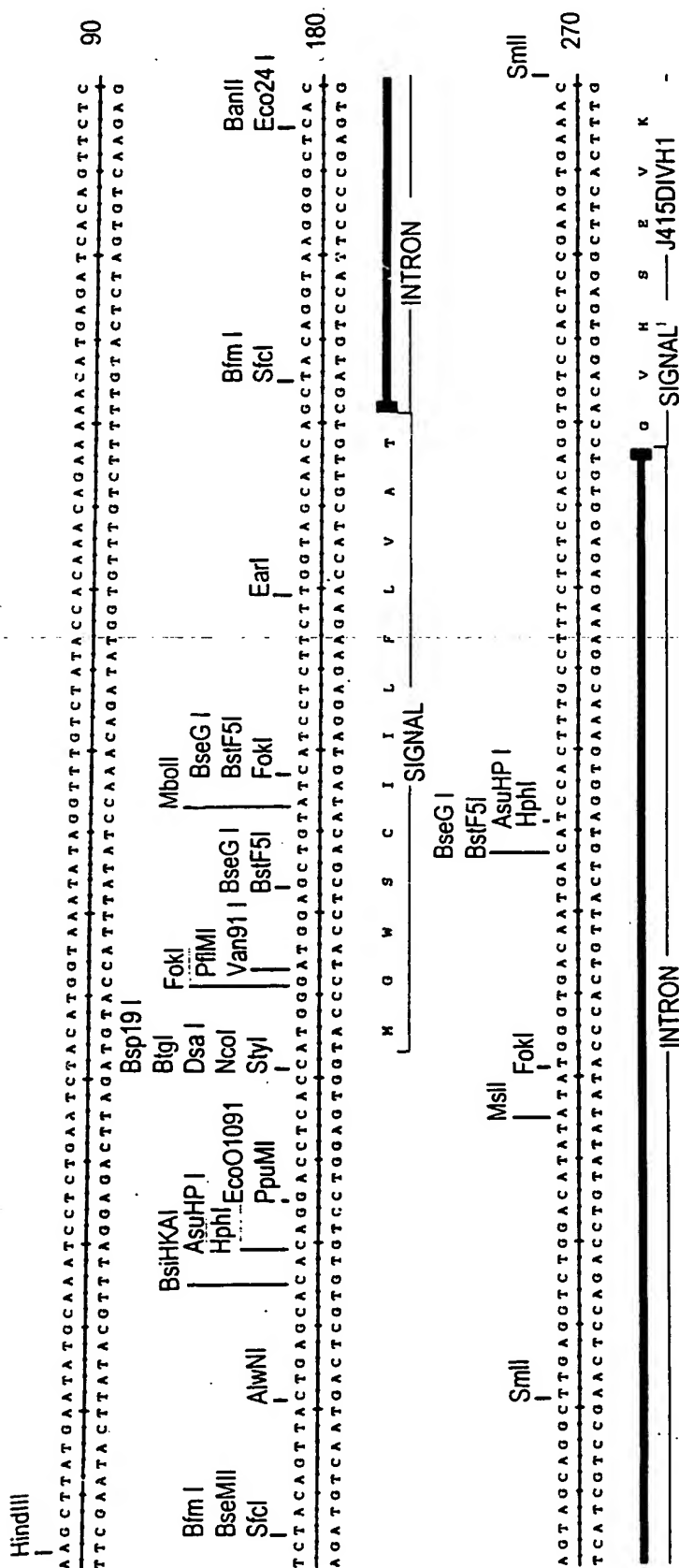
FIG. 5

Applicant(s): Neil Bander

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
 INSULIN-RELATED DISORDERS USING BINDING AGENTS  
 SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

	N I V M T Q F P K S M S A S A G E R M T L T C K A S E																										Majority									
	10													20																						
1	N	I	V	M	T	Q	F	P	K	S	M	S	I	S	V	G	E	R	V	T	L	T	C	K	A	S	E	J415VK								
1	N	I	V	M	T	Q	S	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK1								
1	N	I	V	M	T	Q	S	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK2								
1	N	I	V	M	T	Q	S	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK3								
1	N	I	V	M	T	Q	S	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK4								
1	N	I	V	M	T	Q	F	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK5								
1	N	I	V	M	T	Q	F	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK6								
1	N	I	V	M	T	Q	F	P	K	S	M	S	A	S	A	G	E	R	V	T	L	T	C	K	A	S	E	J415DIVK7								
1	N	I	V	M	T	Q	F	P	K	S	M	S	A	S	A	G	E	R	M	T	L	T	C	K	A	S	E	J415DIVK8								
	N V G T Y V S W Y Q Q K P T Q S P K M L I Y G A S N R																										Majority									
	30													40													50									
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	E	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415VK								
28	N	S	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK1								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK2								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK3								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK4								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK5								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	E	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK6								
28	N	V	G	T	Y	V	S	W	Y	Q	Q	K	P	T	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK7								
28	N	S	G	T	Y	V	S	W	Y	Q	Q	K	P	E	Q	S	P	K	M	L	I	Y	G	A	S	N	R	J415DIVK8								
	F T G V P D R F S G S G S G T D F I L T I S S V Q A E																										Majority									
	60													70													80									
55	F	T	G	V	P	D	R	F	T	G	S	G	S	A	T	D	F	I	L	T	I	S	S	V	Q	T	E	J415VK								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	A	S	S	V	Q	A	E	J415DIVK1								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	A	S	S	V	Q	A	E	J415DIVK2								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	A	S	S	V	Q	A	E	J415DIVK3								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	I	S	S	V	Q	A	E	J415DIVK4								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	I	S	S	V	Q	A	E	J415DIVK5								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	I	S	S	V	Q	A	E	J415DIVK6								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	I	S	S	V	Q	A	E	J415DIVK7								
55	F	T	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	I	L	T	I	S	S	V	Q	A	E	J415DIVK8								
	D L V D Y Y C G Q S Y T F P Y T F G G G T K L E M K																										Majority									
	90													100																						
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415VK									
82	D	P	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK1									
82	D	P	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK2									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK3									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK4									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK5									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK6									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK7									
82	D	L	V	D	Y	Y	C	G	Q	S	Y	T	F	P	Y	T	F	G	G	G	T	K	L	E	M	K	J415DIVK8									

FIG. 6



METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

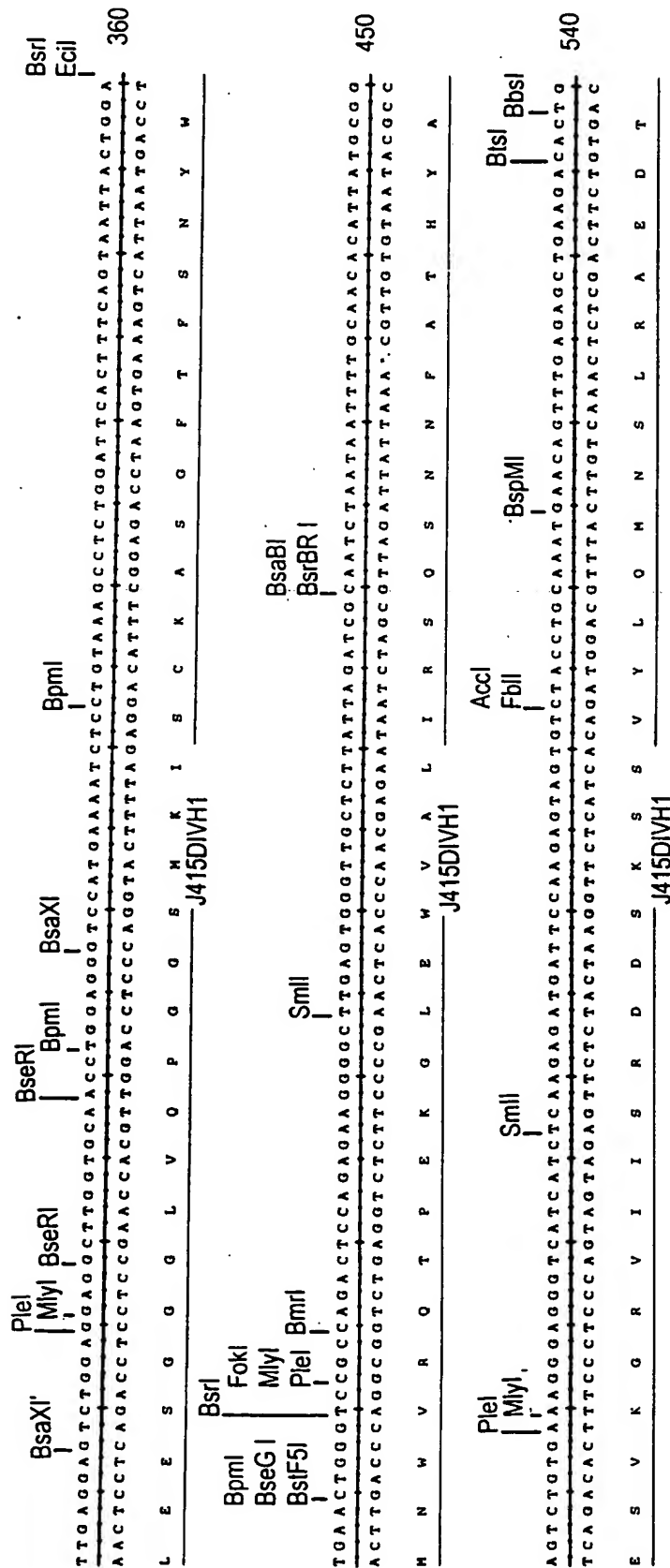


FIG. 7A-2

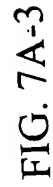


FIG. 7A-3

Applicant(s): Neil Bander

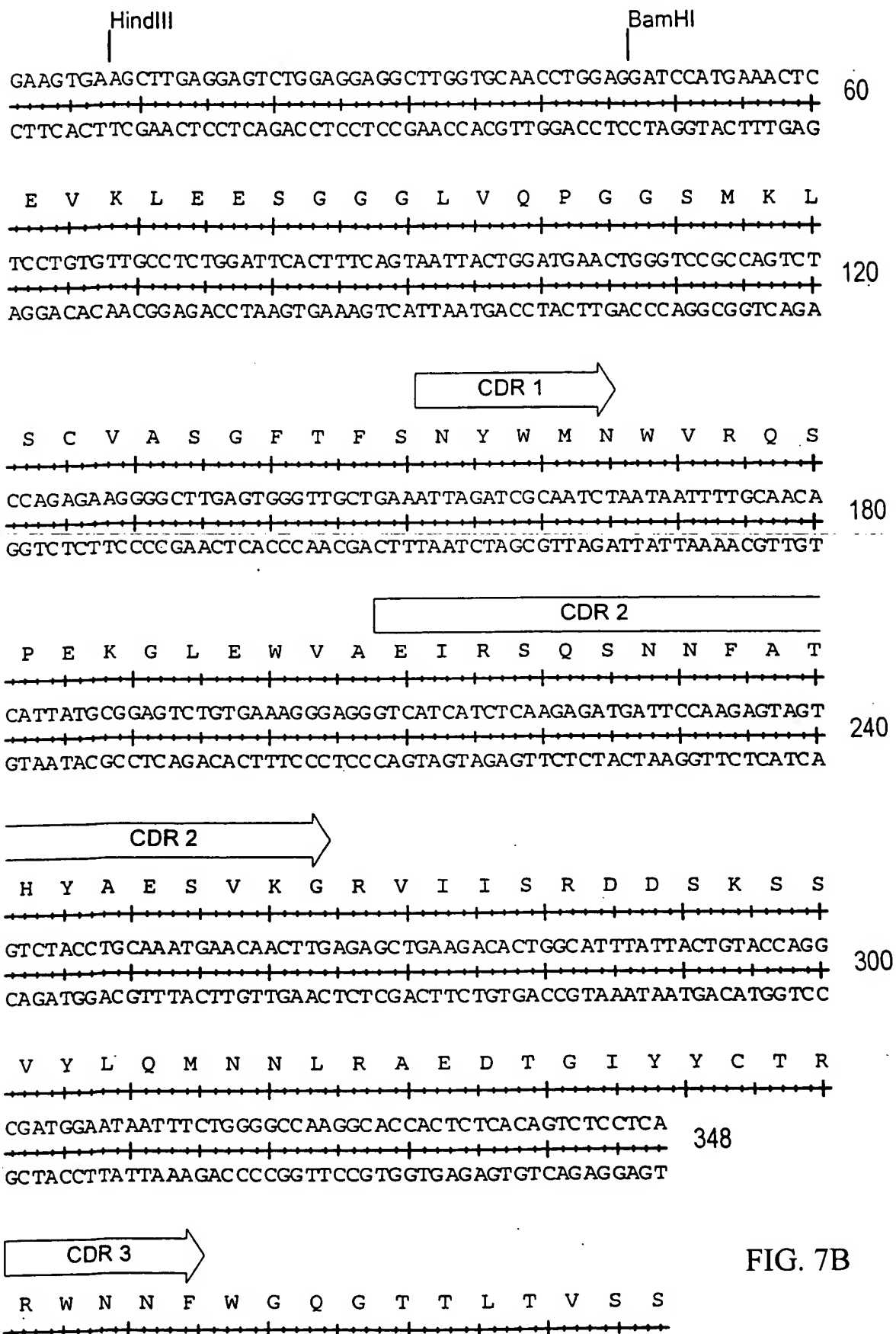
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

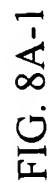
FIG. 7B



Applicant(s): Neil Bander  
 METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
 INSULIN-RELATED DISORDERS USING BINDING AGENTS  
 SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

	E V K L E E S G G G L V Q P G G S M K L S C V A S G F T F S	Majority
	10 20 30	
1	E V K L E E S G G G L V Q P G G S M K L S C V A S G F T F S	J415vh
1	E V K L E E S G G G L V Q P G G S M K L S C V A S G F T F S	MUVHIIIO
	N Y W M N W V R Q S P E K G L E W V A E I R L Q S D N F A T	Majority
	40 50 60	
31	N Y W M N W V R Q S P E K G L E W V A E I R S Q S N N F A T	J415vh
31	N Y W M N W V R Q S P E K G L E W V A E I R L K S D N Y A T	MUVHIIIO
	H Y A E S V K G R V I I S R D D S K S S V Y L Q M N N L R A	Majority
	70 80 90	
61	H Y A E S V K G R V I I S R D D S K S S V Y L Q M N N L R A	J415vh
61	H Y A E S V K G R F T I S R D D S K S S V Y L Q M N N L R A	MUVHIIIO
	E D T G I Y Y C T T G G Y G G R R S W N A F W G Q G T L V T	Majority
	100 110 120	
91	E D T G I Y Y C T - - - - - R R W N N F W G Q G T T L T	J415vh
91	E D T G I Y Y C T T G G Y G G R R S W F A Y W G Q G T L V T	MUVHIIIO
	<u>V S S</u>	Majority
114	<u>V S S</u>	J415vh
121	<u>V S S</u>	MUVHIIIO

FIG. 7C



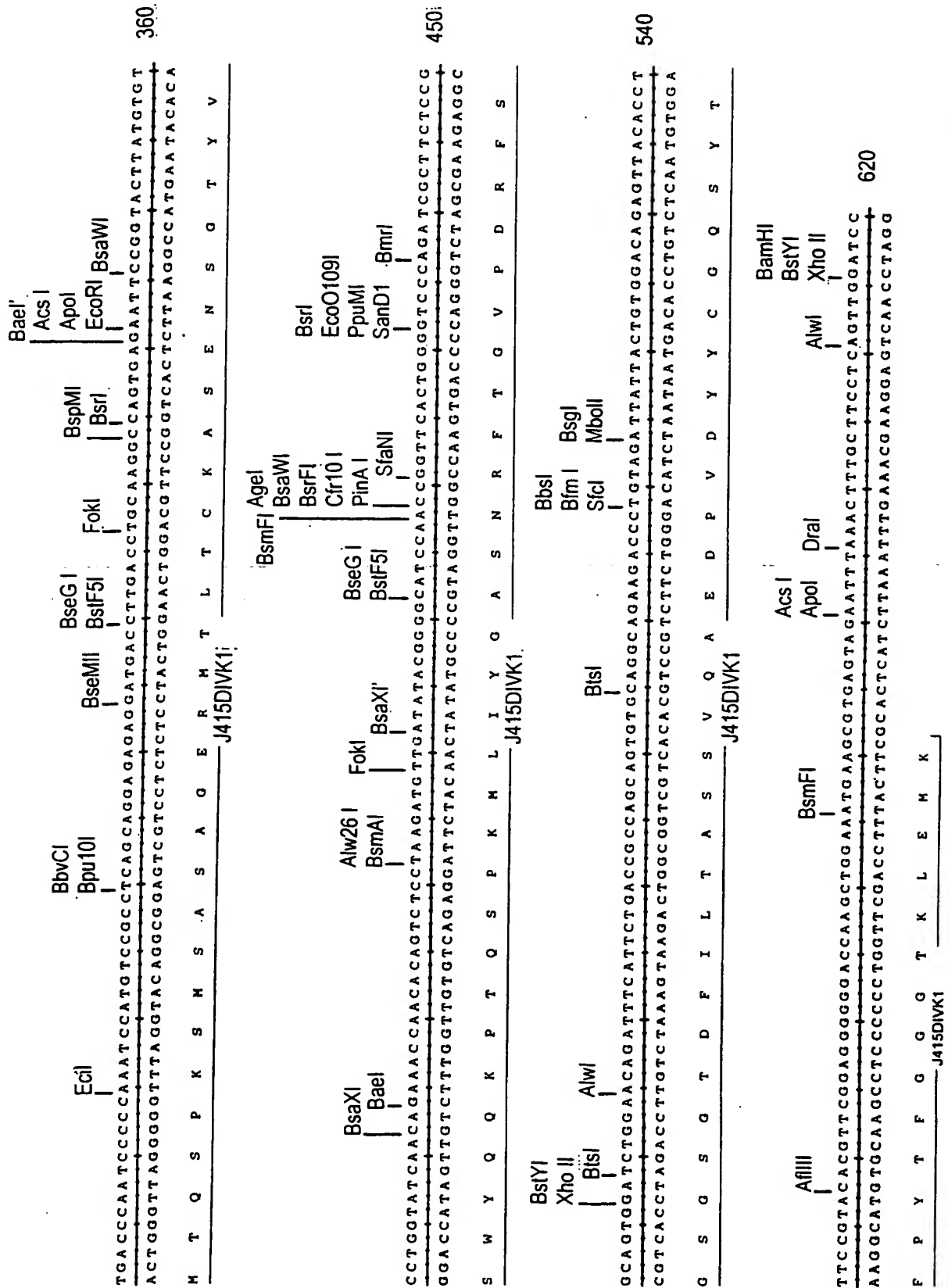


FIG. 8A-2

Applicant(s): Neil Bander

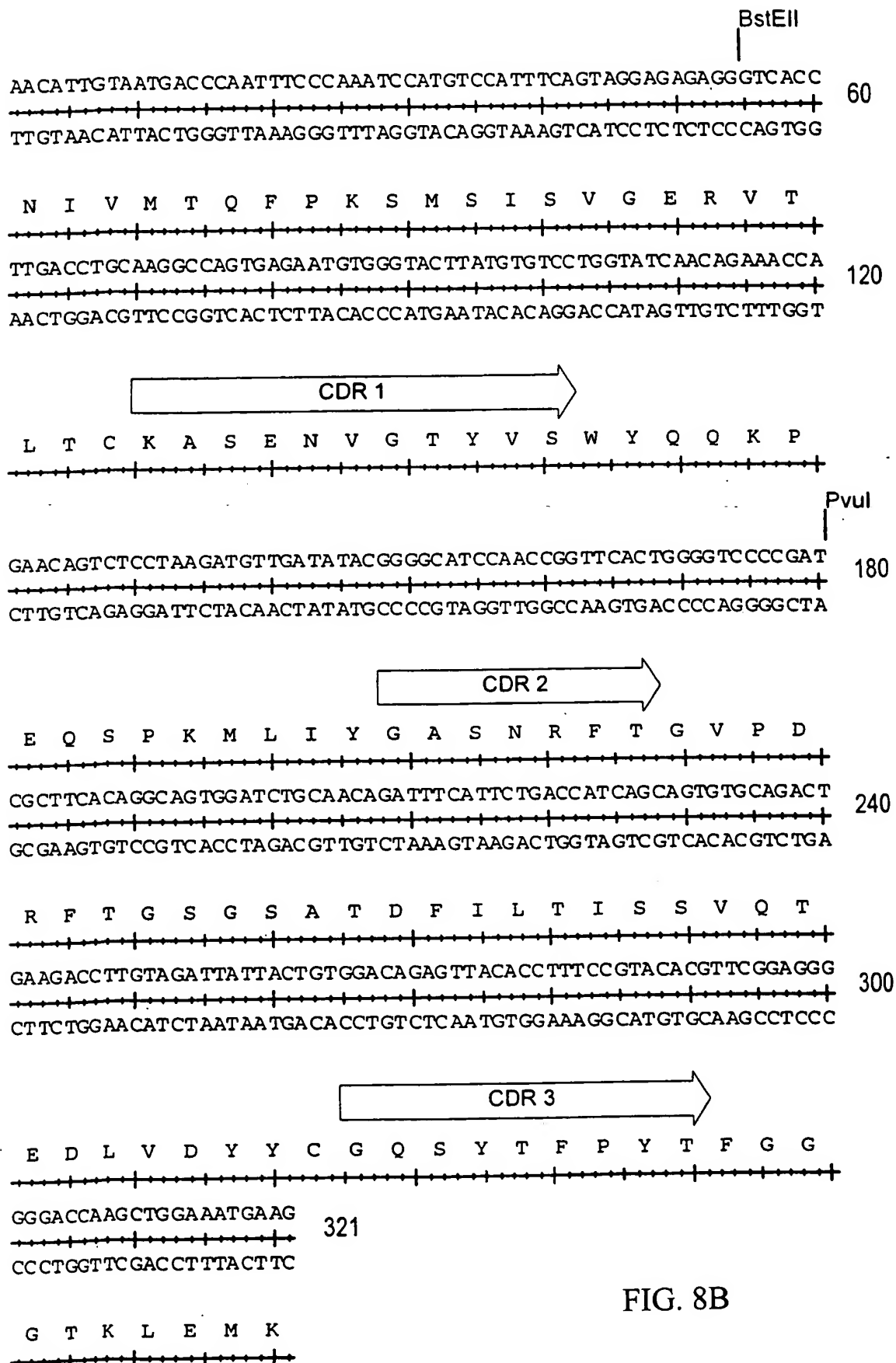
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 8B

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

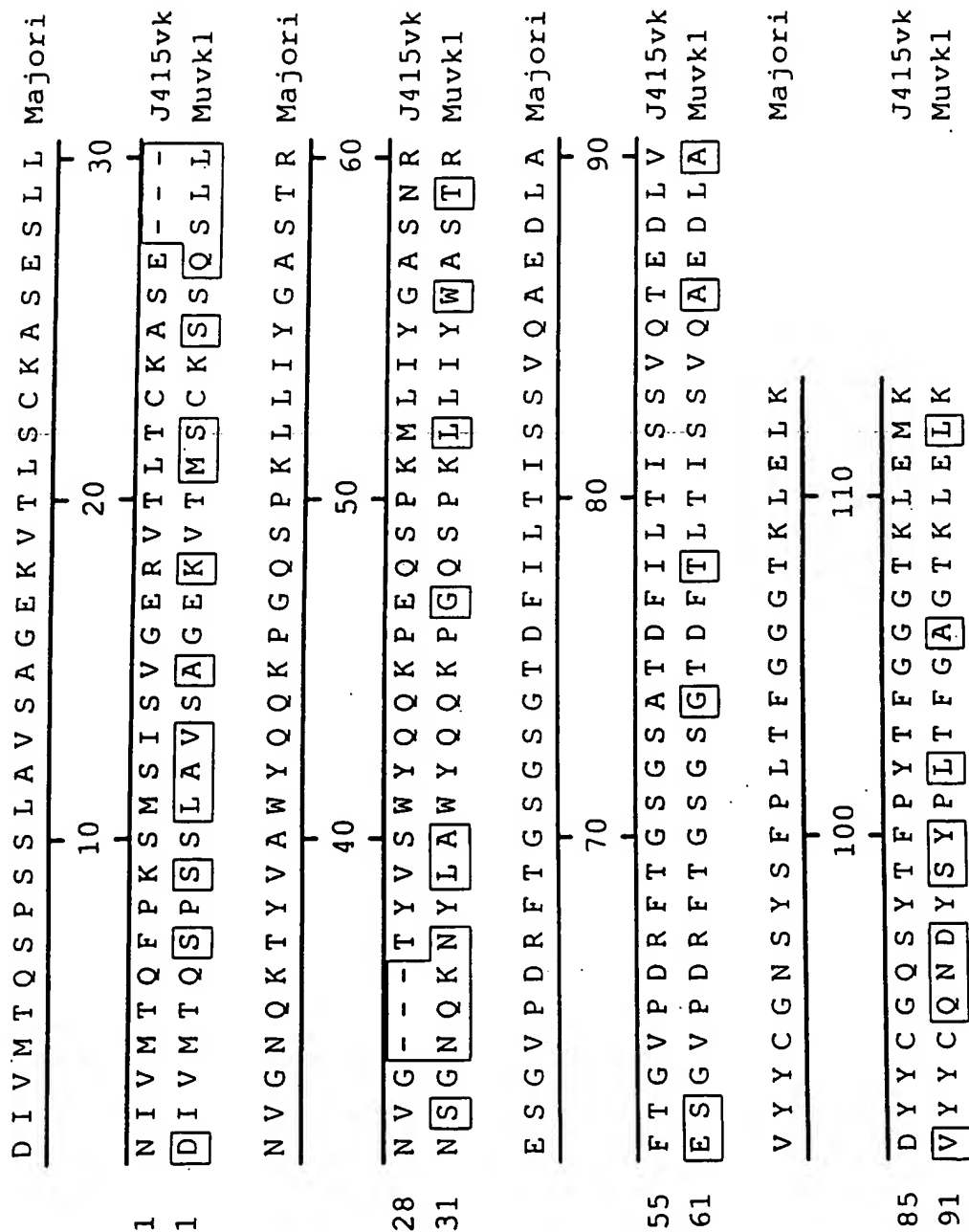


FIG. 8C

Applicant(s): Neil Bander

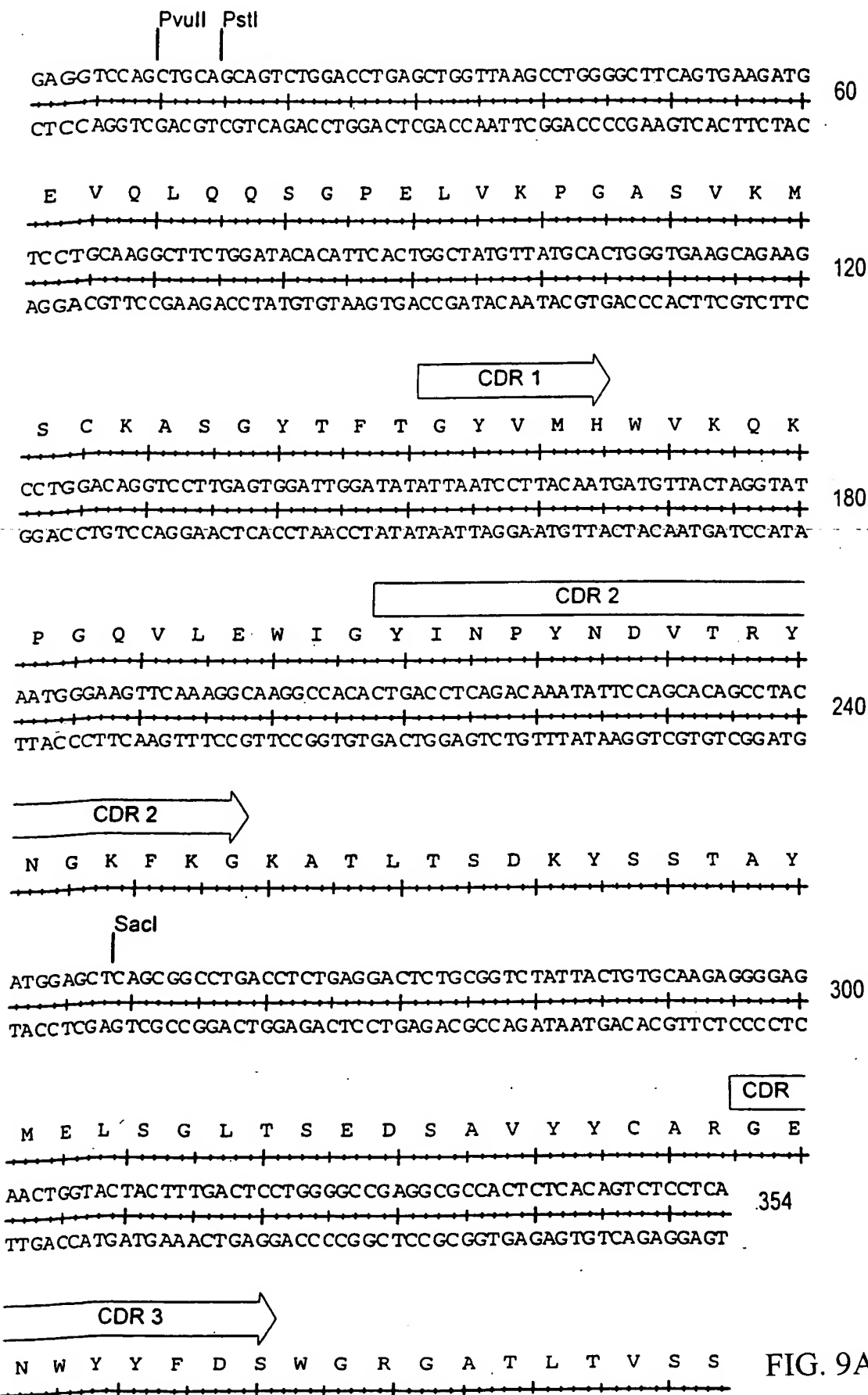
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 9A

Applicant(s): Neil Bander

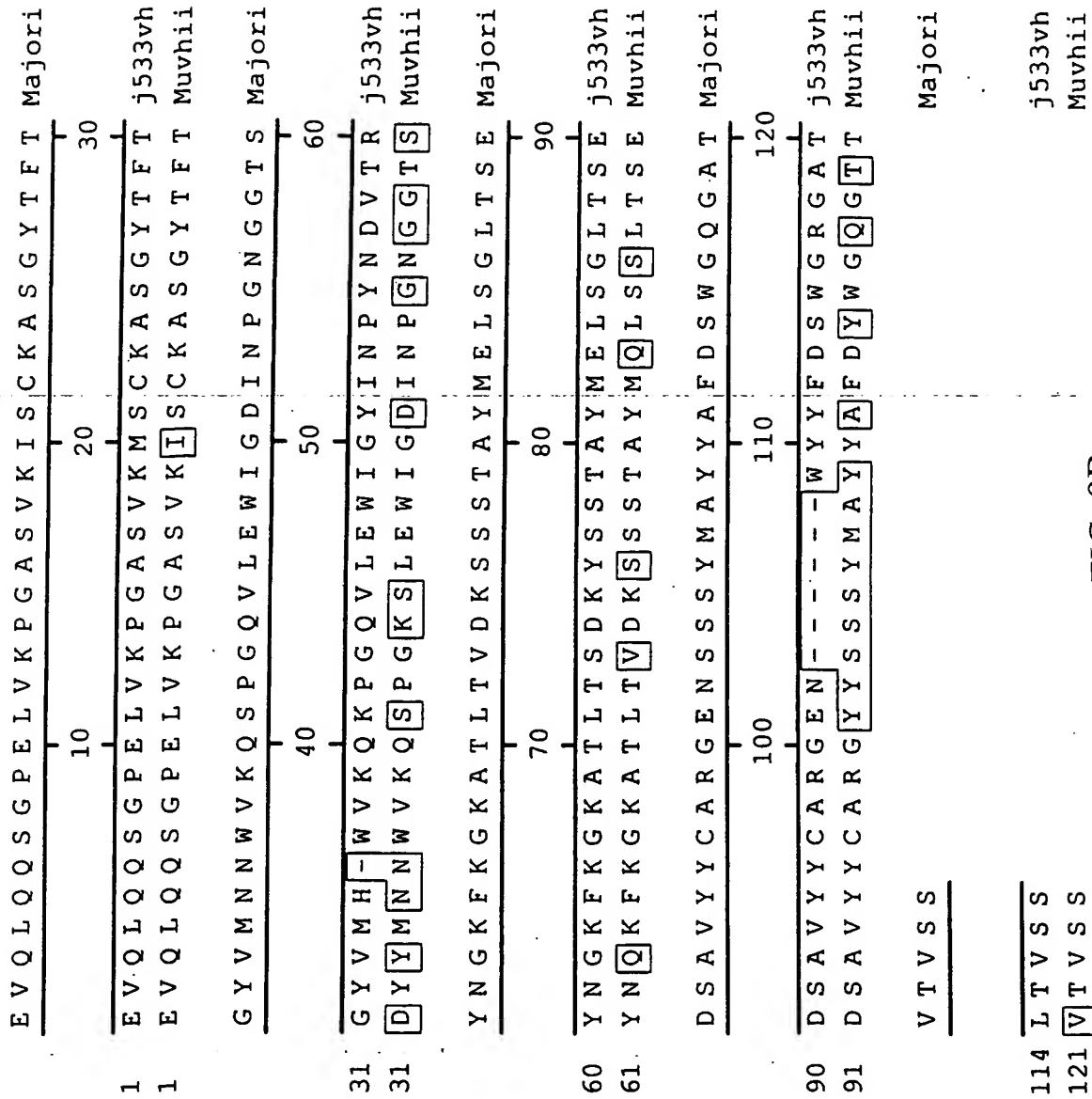
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 9B

Applicant(s): Neil Bander  
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

GACA TTG TGT GAC CCA ATCTC CAG CTTC TTTGG CTG TGTCT TAGGAC AGAGGGCCACC  
CTGT AACAC GACTGG GTTAGAGGT CGAAGAA CC GACACAGAGATCC TGTCTCC CGGTGG

D I V L T Q S P A S L A V S L G Q R A T

PstI

KpnI

ATATCCTGCAGAGCCAGTGAAAGTATTGATAGTTATGACAATACTTTTATGCACTGGTAC  
TATAGGACGTCTCGGTCAC TTT CATAACTATCAATACGTTATGAAAATACGTGACCATG

120

CDR 1

I S C R A S E S I D S Y D N T F M H W Y

CAGCAGAAACCAGGACAGCCACCC AACCTCCTCATCTTTCGTGCATCCATCC TAGAATCT  
GTCGTCTTTGGTCC TGT CGGTGGG TTG GAGGAGTAGAAAGCA CGTAGGTAGGATCTTAGA

180

CDR 2

Q Q K P G Q P P N L L I F R A S I L E S

BamHI

GGGATCCCTGCCAGGTT CAGTGC AGTGGGTC TGGGA CAGACTTCAC CCTCACCATT TAT  
CCCTAGGGA CGGTC CAAGT CACCGTCA CC CAGAC CCTGTCTGAAGTGGGAGTGGTAAATA

240

G I P A R F S G S G S G T D F T L T I Y

BamHI

CCTGTGGAGGCTGATGATGTTGCAACCTATTA CTGTCACCAAAGTAT TGAGGATCCGTAC  
GGACACCTCCGACTACTAC AACGTGGATAATGA CAGTGGTTTCATACTCC TAGGCATG

300

CDR 3

P V E A D D V A T Y Y C H Q S I E D P Y

ACGTTCTGAGGGGGGACCAAGCTGGAAATAAAA  
TGCAAGCCTCCCCCTGGTTCGACCTTATTTT

333



T F G G G T K L E I K

FIG. 10A



FIG. 10B

FIG. 10B

Applicant(s): Neil Bander

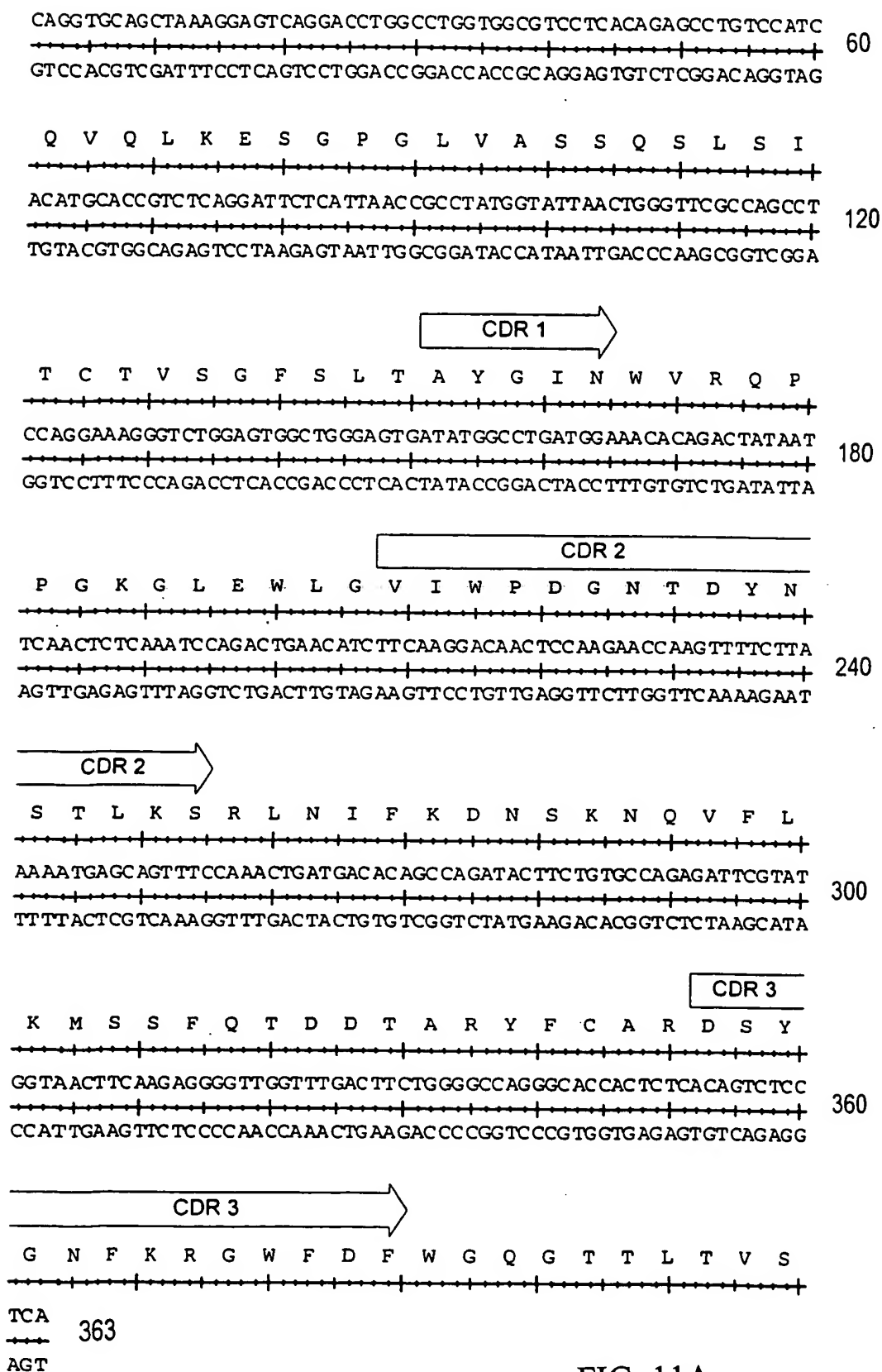
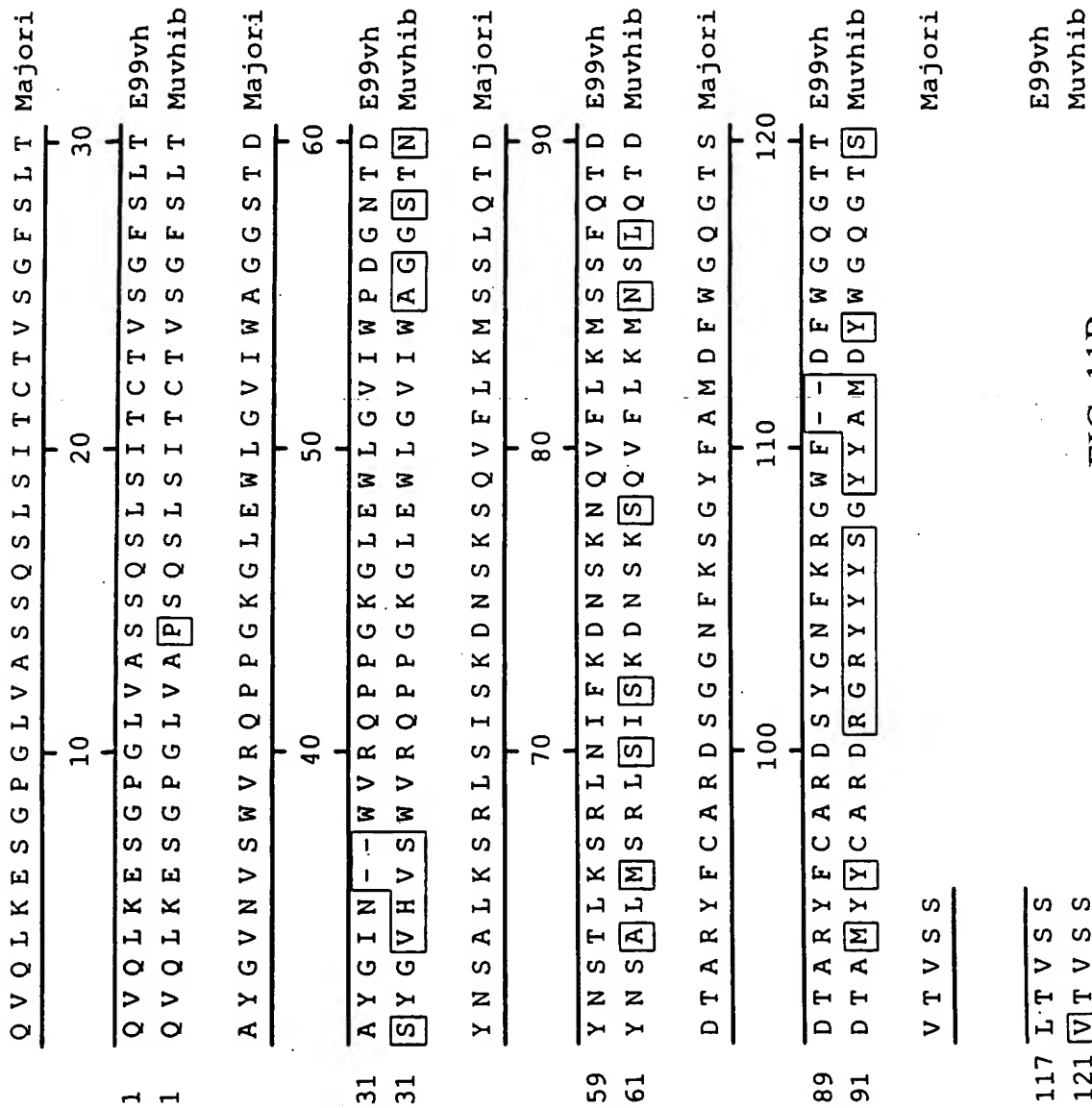
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

FIG. 11A



Applicant(s): Neil Bander  
METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

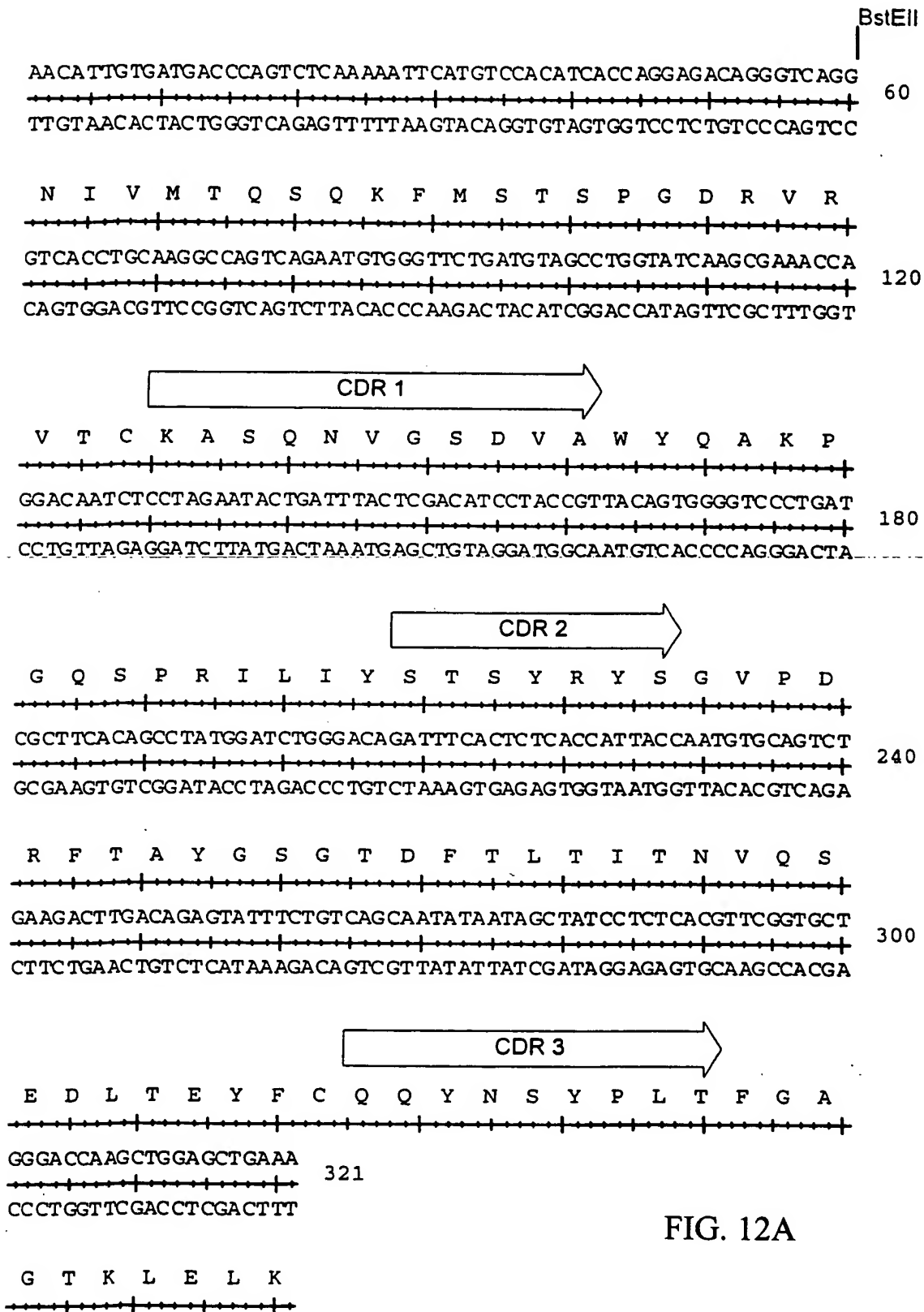


FIG. 12A

METHODS AND COMPOSITIONS FOR TREATING OR PREVENTING  
INSULIN-RELATED DISORDERS USING BINDING AGENTS  
SPECIFIC FOR PROSTATE SPECIFIC MEMBRANE ANTIGEN

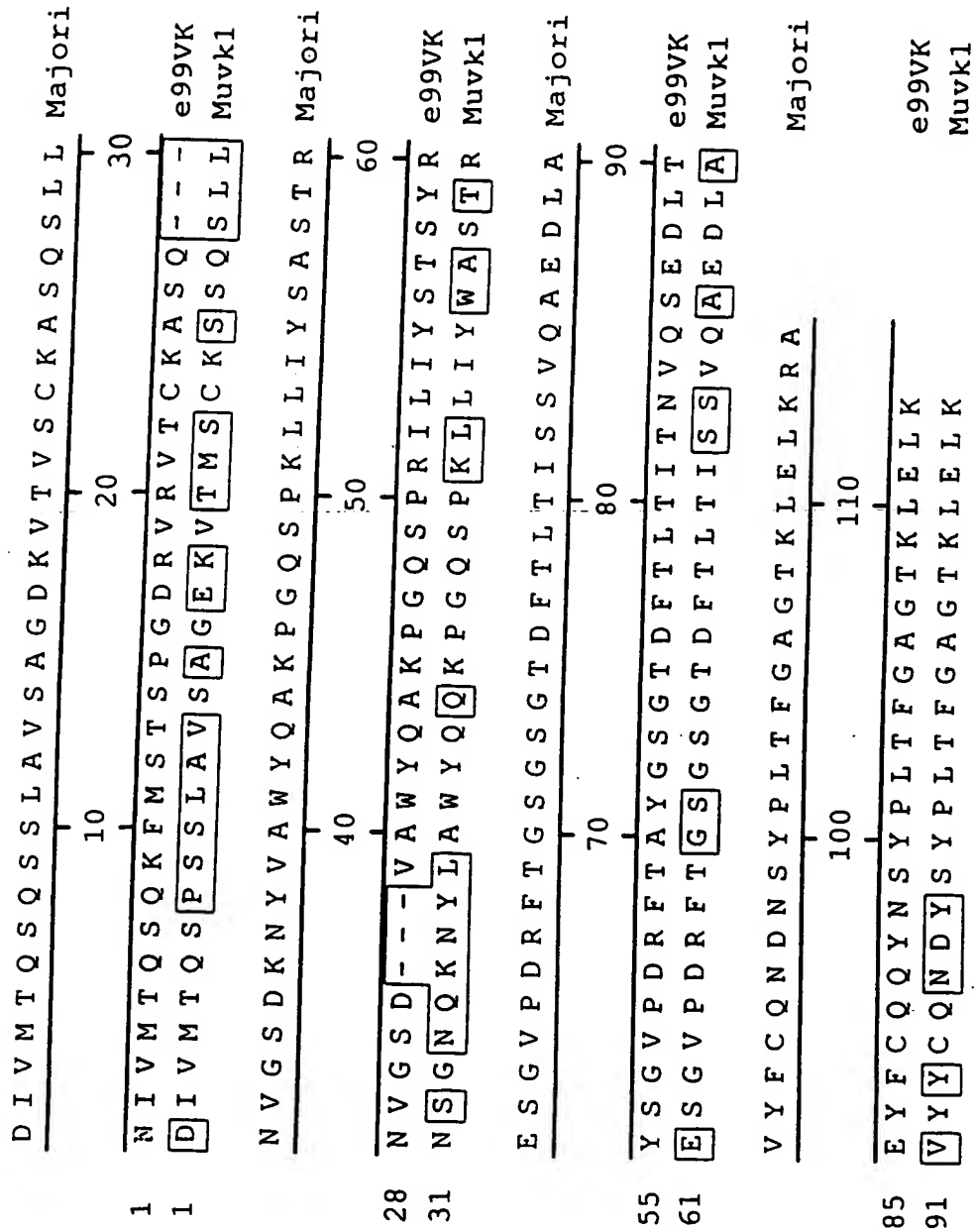


FIG. 12B